



Necessity of electromagnetic emission network arrangement in Georgia

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The field of the tectonic stress has the hierarchical structure. The most characteristic features connected with the regional tectonic elements are determined by the geologic – tectonic data.

It is established that in the young folded areas like the Caucasus the field of tectonic stress is characterized by the sharp anisotropy with the predominance of the compression perpendicular to the trend of folding. Spatial location of the main positive and negative geotectonic morphostructures of the Caucasus shows the existence of the wavy tectonic movements in the region. They are caused by the horizontal compression, provoked evidently by advancement of the Arabian lithosphere plate to the North and its re-approach with the Euro-Asian plate. All these cause considerable deformation of the lithosphere of the Caucasian region and its breaking up in separate blocks. This, in its turn, causes the concentration of stress along the boundaries of the blocks and rising of earthquakes focuses there.

According to the instrumental data starting from 1899 at about 40 large earthquakes were fixed in the Caucasus. The rate of risks associated with these hazards increases every year in Georgia due to the appearance of new complicated technological construction: oil and gas pipelines large dams and hydropower plants and others.

Modern ground-based and satellite methods of viewing enables to reveal those multiple anomalous geophysical phenomena which become evident in the period preceding earthquake and are directly connected with the process of its preparation.

Lately special attention is attributed to the electromagnetic emission fixed during large earthquake and has already been successfully detected in Japan, America and Europe.

Unfortunately there is no electromagnetic emission detection network in Georgia yet.

The presented abstract concerns arrange of EM emission net and begin implementation of this vital task by arrangement of the one relevant station on the fault near Tbilisi. The work is carried out in the frame of grant (DI/21/9-140/13 „Pilot project of before earthquake detected Very Low Frequency/Low Frequency electromagnetic emission network installation in Georgia“) by financial support of Shota Rustaveli National Science Foundation.